

Assessment of the influence of a material standard type on functioning of the probe head errors model

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Accuracy of five-axis measuring systems strongly depends on performance of utilized articulating probe head. The errors of such probe heads can be identified by multiple measurements of material standard placed in different positions of measuring volume of tested system. The results of reference object measurements can be then used for development of probe head errors model [1].

For standard three-axis coordinate systems it was a common practice to separately test a probe head for standard ring and standard sphere because the different errors distributions can be observed for chosen reference object [2]. Authors decided to check if similar phenomenon can be found in case of five-axis measuring systems. It is not that obvious because utilization of rotational probe head movements during measurements changes the probing process. On the basis of measurements of the standard ring and the standard sphere (Fig. 1) probing errors distributions can be obtained and compared, and the models of probe head errors can be developed. This approach allows to assess if selection of different standards affects the functioning of probe head errors model.



Fig. 1.
Probing errors determination on the basis
in standard ring measurements.

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